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Insect Predators-Multicolored Asian Lady Beetle

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Lady beetles (Family: Coccinellidae) are one of the most important insect predators found in agricultural cropping systems. They are called 'generalist predators' because they feed on a wide variety of prey. Adults and immatures (larvae) prey on many soft-bodied pest arthropods including aphids, mealybugs, mites, soft scales, caterpillars and psyllids. They feed on all life stages including eggs, larvae/nymphs and adults of these pests. There are many lady beetle species such as multicolored Asian lady beetle, convergent lady beetle, seven-spotted lady beetle and pink lady beetle that are commonly found in crop fields and gardens. Out of all lady beetle species, the Multicolored Asian lady beetle is the most dominant species.

Figure 1:. A. Multicolored Asian lady beetle adult. Photo credit: Jon Yuschock, Bugwood.org (5430054). B. Adults with wide range of colors and varying number of spots. Photo credit: Bill Ree, Texas A&M University, Bugwood.org (UGA1739026).

Multicolored Asian Lady Beetle

Multicolored Asian lady beetle is a non-native species and was introduced to the United States in 1916 from eastern Asia as a biological control agent but the introduction was not successful. They also were accidentally introduced to the U. S. in 1980's. The first population of multicolored Asian lady beetles was found in 1988 in Louisiana and then rapidly spread to other areas in the U. S. It is not clear whether they were introduced through biological control programs or accidental introductions or both. Multicolored Asian lady beetles are slightly larger than the native lady beetles and have the ability to outcompete the native species.

Eggs

Adult females generally lay their eggs near or amongst aphid colonies. Egg laying starts in early spring. Eggs are oval-shaped, dark yellow in color and laid on end in batches of 20-30. Lady beetle eggs are generally found on the underside of leaves. Eggs hatch and larvae emerge within 3-5 days. Each adult female can lay more than 1600 eggs in its lifetime.

Figure 2:. Multicolored Asian lady beetle. A. Eggs. Photo credit: Clemson University - USDA Cooperative Extension Slide Series, Bugwood.org UGA1233169). B. Larva. Photo credit: David Cappaert, Bugwood.org (UGA2187002).

Larvae

Larvae have elongated, soft bodies with spines, orange markings and dark spots. They are voracious predators and prey on small soft-bodied arthropods similar to adults. They move fast while searching for prey. There are four stages. At each stage, larva molts into the next larval stage. The fourth stage larva eventually molts into a pupa. Larval development takes 10-12 days. The mature fourth stage

larva attaches to a plant or other surface to molt into a pupa.

Pupa

Pupation happens without a cocoon. Pupa is attached to a plant or other surface to complete the process. It is approximately the same size as the adult and orange–red in color with black markings. After 4-6 days, an adult emerges from the pupa.

Figure 3:. Multicolored Asian lady beetle pupa. Photo credit: A. Cheryl Moorehead, Bugwood.org (UGA5211096). B. Gerald J. Lenhard, Louisiana State University, Bugwood.org (UGA1150121)

Adults

They are small beetles with a wide range of colors (red with black spots, solid orange or orange with black spots) and varying number of spots (0-19) on the body. Adults are with a domed, round to oval shape and approximately 0.2-0.3 inches long. They can live 1-3 months to several years. They have black 'M-shaped' marking or dots on the pronotum of thorax (shield shaped body region immediately behind the head). It takes approximately 3 weeks for the insect to develop from the egg stage to the adult.

Figure 4: Multicolored Asian lady beetle adults near an aphid colony. Photo credit: Ansel Oommen, Bugwood.org (5566172).

Adverse impacts

Despite the beneficial services provided by the multicolored Asian lady beetles, they may also cause adverse impacts on humans and environment. They congregate in large numbers inside houses and / or buildings during winter. They are cannibalistic and feed on each other or other lady beetles in absence of prey. Because of their dominant nature, multicolored Asian lady beetles can displace other native lady beetle species. However, killing of multicolored Asian lady beetles in the crop fields is not recommended because they are beneficial insects for agriculture.

Figure 4: Dead multicolored Asian lady beetle adults in a door sill. Photo credit: Mohammed El Damir, Bugwood.org (5571974).

Sensitivity to pesticides

Use of broad-spectrum contact and / or systemic insecticides can disrupt populations of lady beetles and other natural enemies in your garden. It is important to use integrated pest management (IPM) practices and keep insecticides as a last resort when controlling pests.

Multicolored Asian Lady Beetles in Tennessee

Multicolored Asian lady beetle is one of the most common lady beetles found in many agricultural cropping systems in Tennessee.

References

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